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Two new records of the genus *Laboulbenia* from China

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Abstract —Two species of the genus *Laboulbenia* are reported for the first time from China. These are *Laboulbenia bledii* on *Bledius* sp. and *Laboulbenia rigida* on *Trigonotoma lewisi*. All specimens examined were deposited in Guangdong Institute of Microbiology Macrofungi Herbarium (GDGM), Guangzhou, China.

Key words —East Asia, *Laboulbeniales*, taxonomy

Introduction

The genus *Laboulbenia* Mont. & C.P. Robin (Robin 1853) is the largest in the order *Laboulbeniales* and includes about 593 species (Tavares 1985, Kirk et al. 2008). The host insects of this genus belong chiefly to the orders *Coleoptera*, *Diptera*, *Heteroptera*, and *Isoptera*. Forty-eight species and five varieties of *Laboulbenia* have been reported from China so far (Juan & Chien 1996, 1997; Terada et al. 2004; Lee et al. 2006; Shen & Ye 2006).

The aim of this paper is to present additional information on the occurrences and distribution of two species recently recorded in China for the first time. The descriptions are based on Chinese collections.

Taxonomy

Laboulbenia bledii Thaxt., Proc. Amer. Acad. Arts Sci. 38: 27 (1902) Figs. 1–3.

Thallus straight or slightly curved, pale dirty yellow, 216.0–240.0 µm long from base of foot to tip of perithecium. Foot rather small, blackish, nearly conical, 14.4–19.2 µm long. Receptacle cylindrical, gradually tapering towards the base, 112.0–131.2 µm long; cell I twice longer than broad, straight, 32.0–38.4 × 12.8–20.8 µm; cell II longer than cell I, cylindrical, 52.8–65.6 µm;

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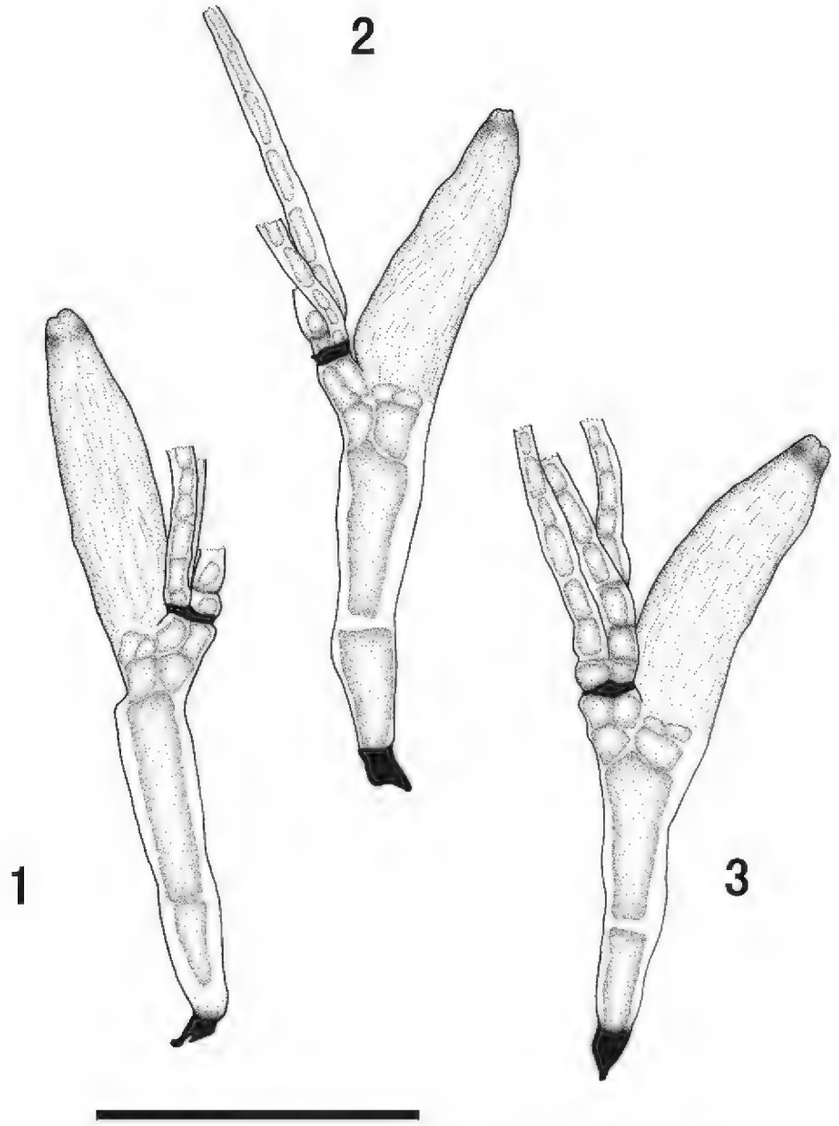


Figs 1–3. *Laboulbenia bledii*. Bar = 100 µm.
Figs 1–2. Mature individual (GDGM 60615-1).
Fig 3. Mature individual (GDGM 60615-3).

cells III, IV, and VI subequal, 9.6–16.0 × 6.4–16.0 µm; cell V subequal to cell IV in length, with nearly half of the upper portion free. Insertion cell free, flattened, blackish, slightly constricted, 3.2–5.6 × 12.8–16.0 µm. Appendages composed of three straight closely arranged branches; the outer appendage simple; the inner appendage with the basal cell somewhat smaller than that of the outer appendage, bearing a branch on either side similar to the outer appendage. Perithecium near completely free, slender and straight, tapering to the tip; the lip-cells rather coarse, prominent, with a subterminal blackish shade on the two sides, 99.2–104.0 × 28.8–32.2 µm.

Host: On elytra and abdomen of *Bledius* spp. (*Coleoptera*, *Staphylinidae*), e.g. *B. jacobinus* (Thaxter 1908).

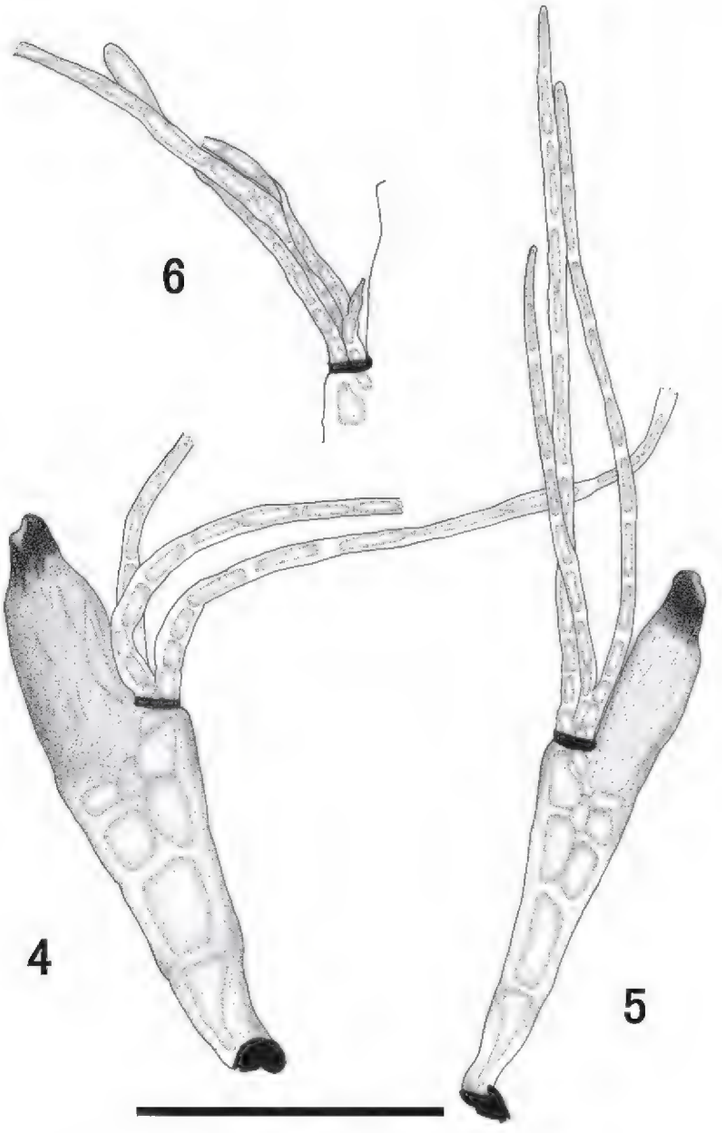
Specimen examined: China, Yunnan province, Mengla county, on the surfaces of the abdomen and elytra of *Bledius* sp., 24 Jul 1985, Dong-Hai Ye, GDGM 60615-1, 60615-3.

KNOWN DISTRIBUTION: America (Thaxter 1908), China (this study).

REMARK: The main features of *Laboulbenia bledii* are: (1) nearly half of the upper portion of cell V is free; (2) cell II is usually two times longer than cell I or even longer; (3) the outer appendage is simple without any branches, and the inner appendage is also simple, but dichotomous. The Chinese collection generally fits the description given by Thaxter (1902).

Laboulbenia rigida Thaxt., Proc. Amer. Acad. Arts Sci. 30: 475 (1895). FIGS. 4–6.

THALLUS straight, more or less deeply tinged with olive brown, 195.2–205.0 μm long from the base of foot to tip of the perithecium. FOOT rather small, blackish, nearly conical, 12.0–15.2 μm long. RECEPTACLE cylindrical, sometimes rather long, gradually tapering towards the base, 125.6–130.0 μm long; cell I twice



FIGS 4–6. *Laboulbenia rigida*. Bar = 100 μm.
FIG 4–5. Mature individual (4: GDGM 60398-2; 5: GDGM 60398-3).
FIG 6. Appendages with solitary sessile antheridia (GDGM 60398-1).

longer than broad, straight, 32.0–37.6 × 10.0–25.6 μm; cell II as long as cell I, cylindrical; cells III, IV, and VI subequal in length, 17.6–24.0 × 10.0–16.0 μm; cell V small, nearly triangular, 4.8–9.6 × 3.2–3.5 μm. Insertion cell flattened, blackish, slightly constricted, 3.2–4.0 × 14.4–18.9 μm. Appendages arising from two basal cells; the outer appendage producing a single simple, slightly tapering branch, consisting of 8–14 cells, 131.3–241.6 μm long; the inner appendage producing two similar branches, simple, consisting of 9–11 cells, and bearing solitary sessile antheridia near the base. Antheridia cylindrical, tapering towards the distal end, 12.8 × 4.0 μm. Perithecium near completely free, straight, somewhat inflated, quite opaque, with a stout, snout-like and slightly inward bent apex, 81.6–91.2 × 24.0–35.2 μm.

Host: On *Pterostichus patruelis* (Thaxter 1895).

Specimen examined: China, Yunnan province, Jinghong county, on the surface of the thorax of *Trigonotoma lewisi* (*Coleoptera*, *Carabidae*), 17 Jul 1985, Dong-Hai Ye, GDGM 60398-1, 60398-2, 60398-3.

Known distribution: America (Thaxter 1895), France (Lepesme 1941), Italy (Colla 1934), China (this study).

Remark: *Laboulbenia rigida* is distinguished by its rigid, straight, simple appendages and solitary sessile antheridia, usually occurring near the base of the inner appendage branch, and the nearly completely free, opaque perithecium. The Chinese collection generally conforms with the description given by Thaxter (1895), except for the longer appendages, and different host genus within the same family (*Carabidae*).

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Literature cited

Colla S. 1934. *Laboulbeniales, Peyritschiellaceae, Dimorphomycetaceae, Laboulbeniaceae Heterothallicae, Laboulbeniaceae Homothallicae, Ceratomycetaceae*. 16: 1–157. In: Flora Italica Cryptogama, Pars I: Fungi. Società Botanica Italiana, Rocca S. Casciano.

Juan LY, Chien CY. 1996. Study on the *Laboulbeniales* (*Ascomycetes*) of Taiwan (II). Biol. Bull. NTNU. 31: 5–11.

Juan LY, Chien CY. 1997. Study on the *Laboulbeniales* (*Ascomycetes*) of Taiwan (III). Biol. Bull. NTNU. 32: 59–63.

Kirk PM, Cannon PF, David JC, Stalpers JA. 2008. Dictionary of the Fungi. 10th ed. Wallingford, UK: CAB International.

Lee YB, Na YH, Lim CK. 2006. Notes on two species of the *Laboulbeniales* from Tibet. Microbiology 34: 41–43.

Lepesme P. 1941. Catalogue des *Laboulbéniales* de la collection François Picard. Bull. Mus. Hist. Nat. [Paris] (2e sér.) 13: 481–488.

Robin CP. 1853. Histoire Naturelle des Végétaux Parasites qui croissent sur l'Homme et sur les Animaux Vivants. Vol 1. J.-B. Baillière: Paris. 702 pp.

Shen YH, Ye DH. 2006. Flora Fungorum Sinicorum Vol. 28: *Laboulbeniales*. Beijing: Science Press. 1–294.

Tavares II. 1985. *Laboulbeniales* (*Fungi, Ascomycetes*). Mycol. Memoir 9: 1–627.

Terada K, Hsu MH, Wu WJ. 2004. Notes on the carabidicolous *Laboulbeniales* (*Ascomycetes*) of Taiwan I. Bot. Bull. Acad. Sin. 45: 87–94.

Thaxter R. 1895. Notes on *Laboulbeniaceae*, with descriptions of new species. Proc. Amer. Acad. Arts Sci. 30: 467–481.

Thaxter R. 1902. Preliminary diagnoses of new species of *Laboulbeniaceae*. V. Proc. Amer. Acad. Arts Sci. 38: 7–57.

Thaxter R. 1908. Contribution toward a monograph of the *Laboulbeniaceae*. Part II. Mem. Amer. Acad. Arts Sci. 13: 217–469.